FIGURE 1

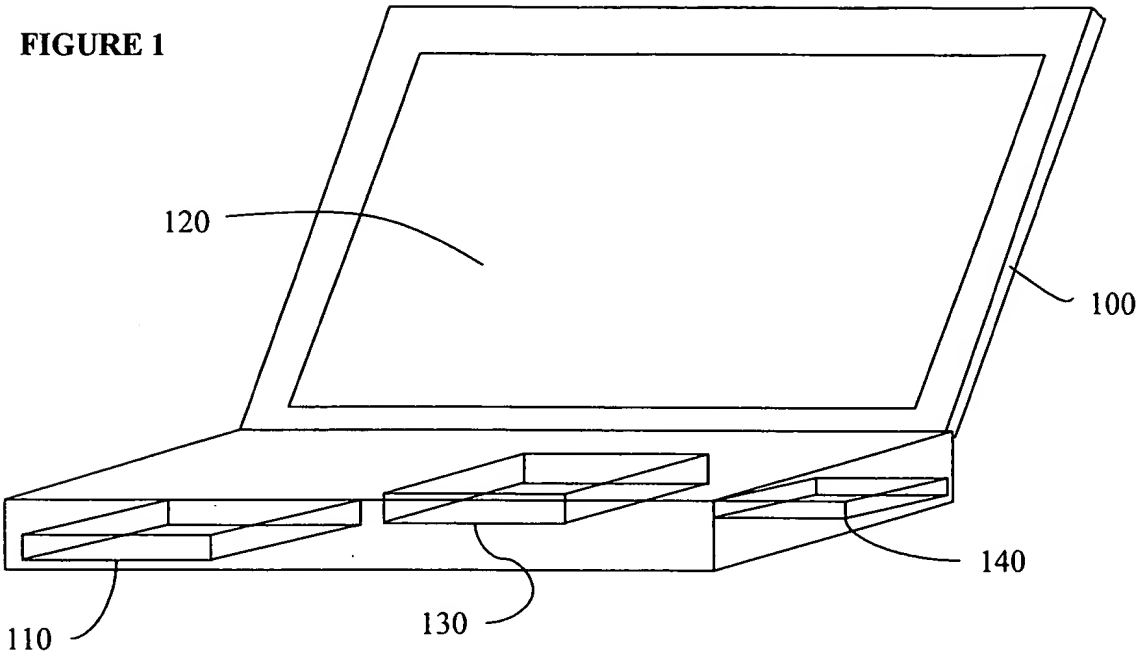
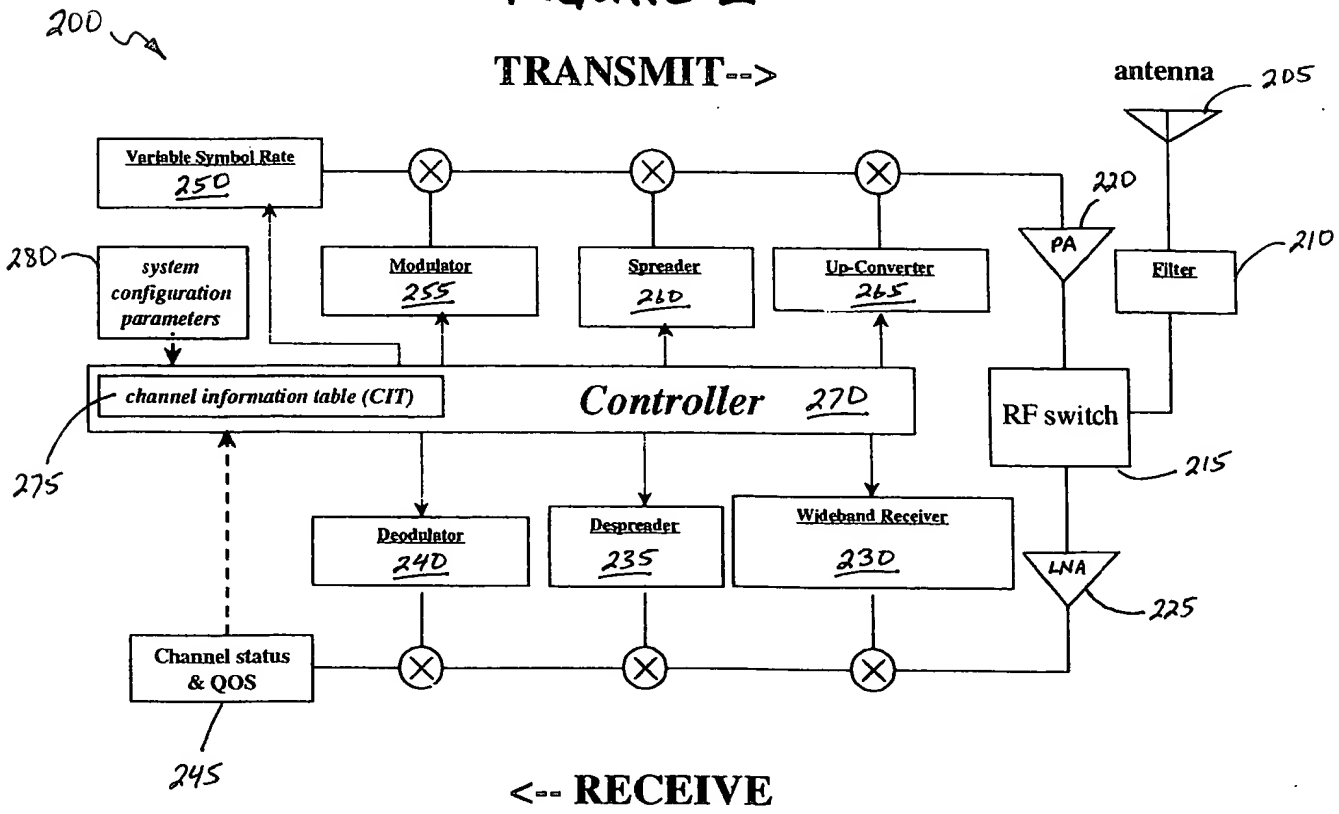


FIGURE 2



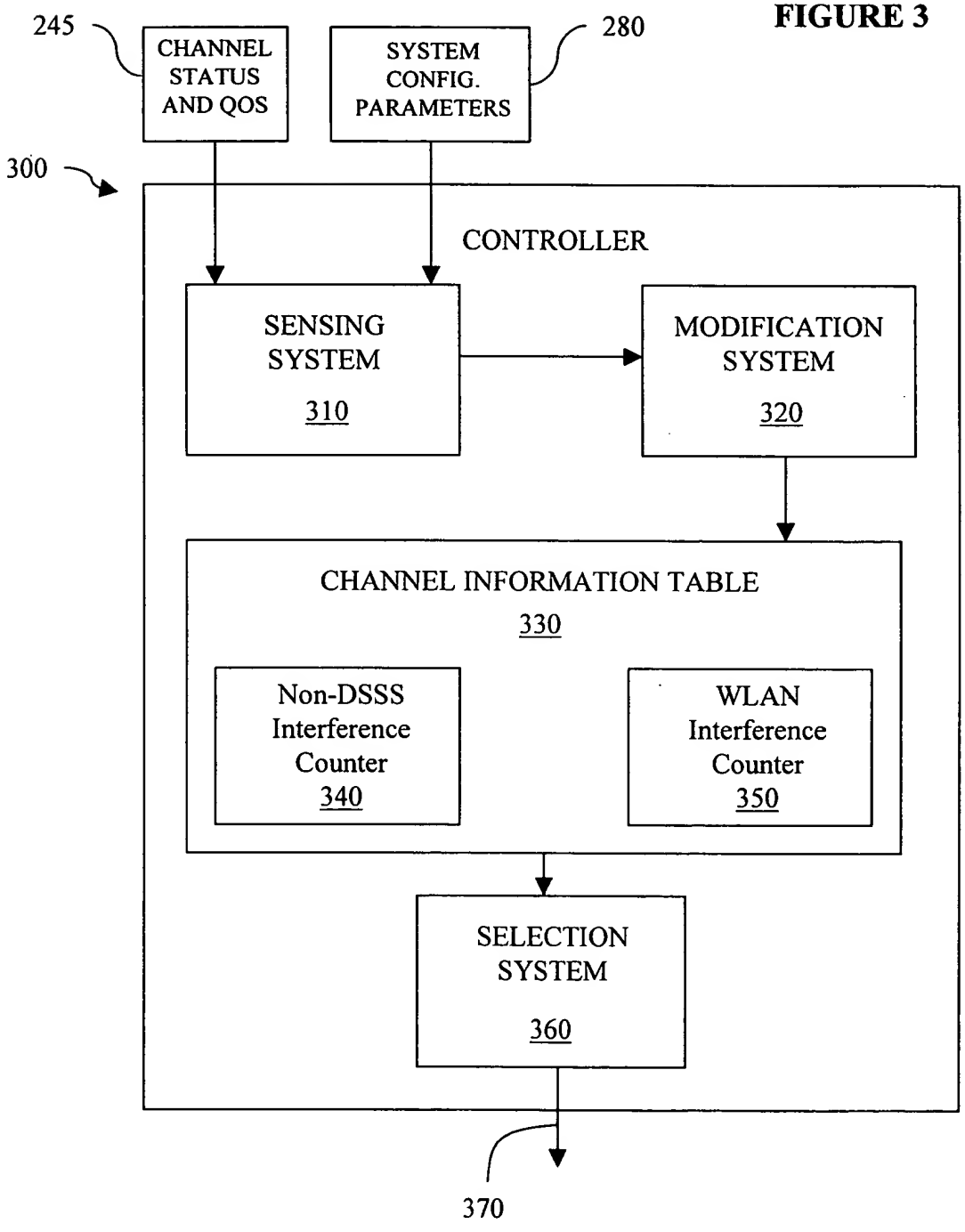

245
CHANNEL STATUS AND QOS
SYSTEM CONFIG. PARAMETERS
280
300
CONTROLLER
SENSING SYSTEM
310
MODIFICATION SYSTEM
320
CHANNEL INFORMATION TABLE
330
Non-DSSS Interference Counter
340
WLAN Interference Counter
350
SELECTION SYSTEM
360
370

FIGURE 3

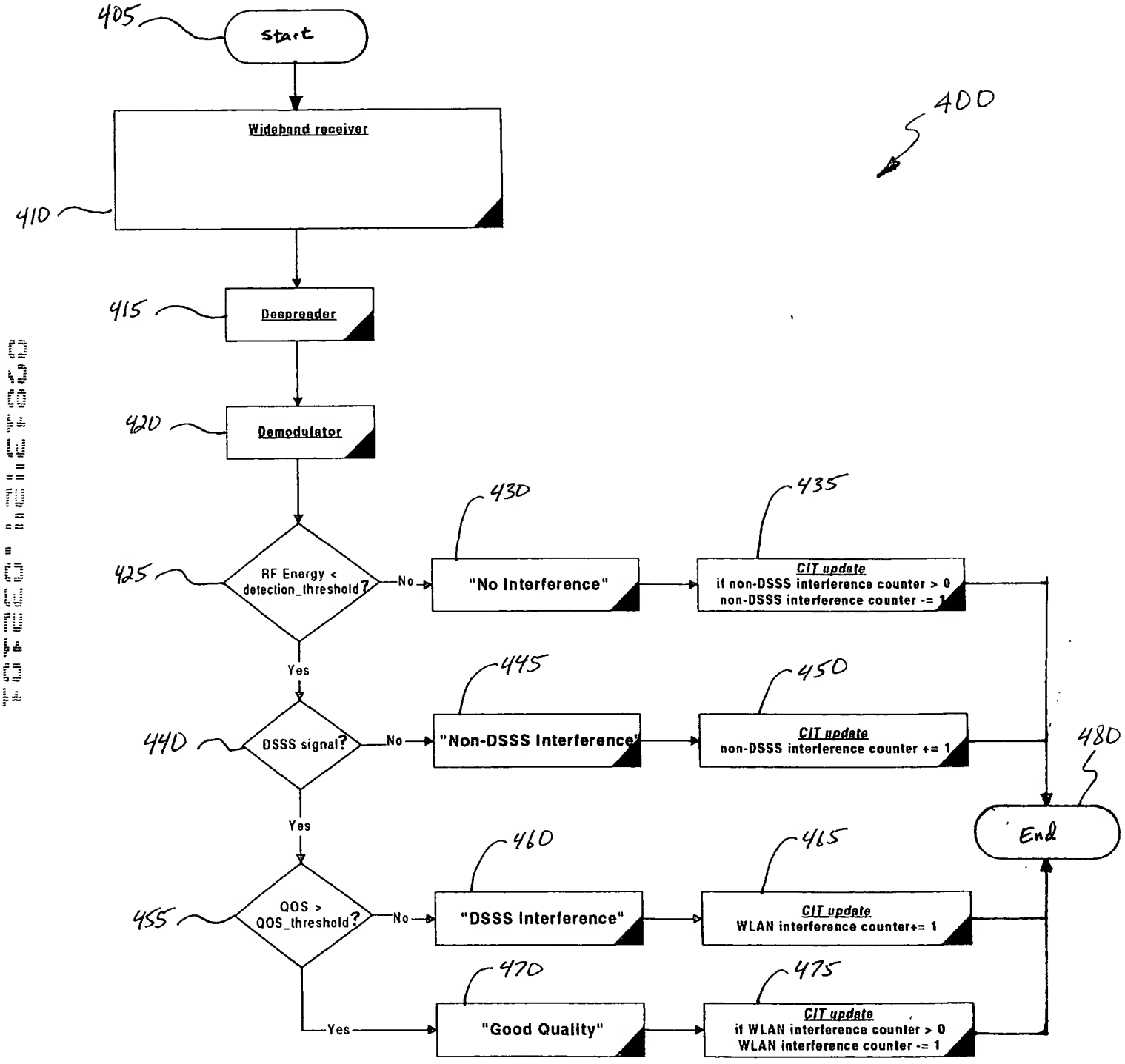

405
Start
400
Wideband receiver
410
415
Despreader
420
Demodulator
425
RF Energy < detection_threshold?
No
430
"No Interference"
435
CIT update
if non-DSSS interference counter > 0
non-DSSS interference counter -= 1
Yes
440
DSSS signal?
No
445
"Non-DSSS Interference"
450
CIT update
non-DSSS interference counter += 1
480
End
Yes
455
QOS > QOS_threshold?
No
460
"DSSS Interference"
465
CIT update
WLAN interference counter+= 1
Yes
470
"Good Quality"
475
CIT update
if WLAN interference counter > 0
WLAN interference counter -= 1

FIGURE 4

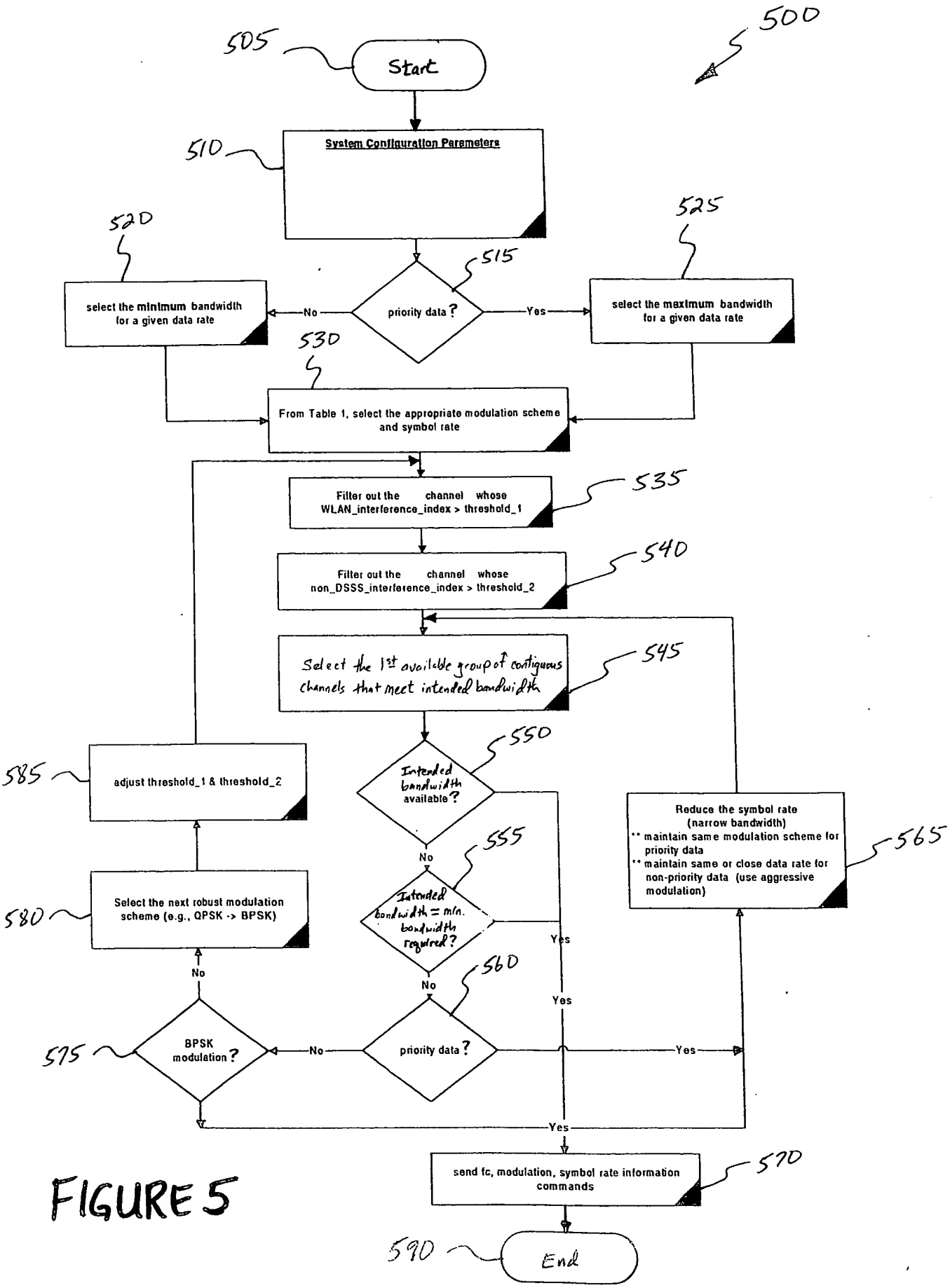

500
505
Start
510
System Configuration Parameters
515
priority data?
No
Yes
520
select the minimum bandwidth for a given data rate
525
select the maximum bandwidth for a given data rate
530
From Table 1, select the appropriate modulation scheme and symbol rate
535
Filter out the channel whose WLAN_interference_index > threshold_1
540
Filter out the channel whose non_DSSS_interference_index > threshold_2
545
Select the 1st available group of contiguous channels that meet intended bandwidth
550
Intended bandwidth available?
555
Intended bandwidth = min. bandwidth required?
560
priority data?
565
Reduce the symbol rate (narrow bandwidth)
** maintain same modulation scheme for priority data
** maintain same or close data rate for non-priority data (use aggressive modulation)
570
send fc, modulation, symbol rate information commands
575
BPSK modulation?
580
Select the next robust modulation scheme (e.g., QPSK -> BPSK)
585
adjust threshold_1 & threshold_2
590
End

FIGURE 5